

## **REMARKS**

### ***Summary of Amendments and Status of Claims***

Claims 1-11 have been canceled.

Claims 12 and 17 have been amended to address the claim objections made in the June 2, 2009 Office action.

Claims 22-27 were previously withdrawn.

Meanwhile, new claims 28-31, each depending directly from claim 12, have been added.

- Support for claims 28-30 can be found in paragraph [0115] of the specification as filed, while support for claim 31 can be found in the entry for Implementation 32 in Table X of the specification.

Claim 12 is thus the sole independent claim pending. No substantive amendments have been made to claim 12. Inasmuch as claim 12 is believed to be allowable over the prior art of record, entry of the present amendment and allowance of all the pending claims is respectfully requested.

### ***Claim Objections***

Claims 12-21 were objected to for the claim 12 recitation, "a step of separating from said starting substrate Group III nitride semiconductor crystals . . . ."

Although the Office kindly suggested rephrasing this recitation to read that the starting substrate is separated from the crystal, throughout the present specification the reverse is stated: namely, that the crystal (made up of the crystal substrate and the crystal layer grown on the substrate) is separated from the starting substrate.

Accordingly, Applicant has chosen to amend the objected-to phrase, which appears in both claim 12 and claim 17, by inserting separating commas to make the phrase read more clearly, as follows: "a step of separating<sub>1</sub> from said starting substrate<sub>2</sub>, Group III nitride semiconductor crystals . . . ."

It is earnestly urged that appropriate correction as required has been made.

### ***Claim Rejections – 35 U.S.C. § 112***

Claims 12-21 were rejected for indefiniteness because certain recitations in claim 12 were read as lacking sufficient antecedent basis, with claims 13-21 inheriting the alleged deficiencies.

Claim 12 recites, in part:

a step of growing at least two Group III nitride semiconductor crystal substrates . . . ;  
a step of growing at least one Group III nitride semiconductor crystal layer on each said Group III nitride semiconductor crystal substrate;  
and  
a step of separating . . . Group III nitride semiconductor crystals that are constituted by said Group III nitride semiconductor crystal substrates and said Group III nitride semiconductor crystal layers.

Abbreviating the recitations based on the underlined portions in the foregoing section quoted from claim 12 gives:

growing at least two substrates;  
growing at least one layer on each said substrate; and  
separating crystals constituted by said substrates and said layers.

Hence, it is respectfully submitted that i) there is in fact proper antecedent basis for reciting "each said . . . substrate" in line 6 of claim 12; ii) there is in fact proper antecedent basis for reciting "said . . . substrates" in line 8 of claim 12; and iii) there is in fact proper antecedent basis for reciting "said . . . layers" in line 9 of claim 12.

Therefore, it is believed that the rejection under this section is not proper and should be withdrawn.

### ***Claim Rejections – 35 U.S.C. § 102***

Claims 1-10 and 12-21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 6,617,261 to Wong et al.

Claims 1-10 have been canceled.

*Wong et al.*, column 10, lines 21-26, states,

Removal of the insulating sapphire substrate from the grown GaN substrate simplifies providing electrical contacts to the resulting GaN substrate for nitride based semiconductor laser structures subsequently grown on the GaN substrate.

Thus, a GaN substrate is grown onto a sapphire substrate as a starting substrate, and then a nitride-based semiconductor laser structure is built onto the GaN substrate having been separated from the sapphire substrate.

In contrast, according to the present invention as set forth in the pending claims, after at least two III-nitride semiconductor crystal substrates are formed onto a starting substrate, at least one III-nitride semiconductor crystal layer is grown onto each III-nitride substrate, without separating the III-nitride substrates from the starting

substrate, and afterwards the starting substrate and the III-nitride substrates, together with the III-nitride layers formed onto the III-nitride substrates, are separated.

It is respectfully submitted that the manufacturing potential of forming, in the manner of the present invention, nitride layers onto a GaN substrate with the starting substrate still attached clearly is superior to forming, as in *Wong et al.*, nitride layers onto a GaN substrate once having been separated from the starting substrate.

With *Wong et al.*, after GaN crystal has been grown onto a sapphire substrate, as set forth in column 5, line 34 through column 7, line 30 of the reference, the following sequence of operations is carried out:

mask layer is deposited on GaN layer → mask layer is patterned →  
GaN layer is etched through mask layer, creating individual GaN  
substrates → GaN substrates are bonded to silicon support substrate  
→ GaN substrates are separated from sapphire substrate → GaN  
substrates are released from support substrate.

Thereafter, epitaxial growth is carried out.

In contrast, according to the present invention as recited in the pending claims, and as set forth under Embodying Mode 6 in the description section of the present specification, there are no steps that involve bonding III-nitride substrates onto, and releasing them from, a support substrate.

Inasmuch as claim 12 is believed to be patentably distinct from *Wong et al.* at least for the foregoing reasons, claims 13-21, which each depend directly or indirectly from claim 12, are also believed to be patentable.

### ***Claim Rejections – 35 U.S.C. § 103***

Claims 10 and 21: *Wong et al.* '261 in view of Tsuda et al. '957

Claims 10 and 21 were rejected as being unpatentable over *Wong et al.* in view of U.S. Pat. App. Pub. No. 2003-0136957 in the name of Tsuda et al.

Inasmuch as the patentability of the present application is not believed to reside only in the limitations recited in claims 10 and 21, but in the first place, in the limitations of their parent claim 12, it is respectfully submitted that these dependent claims should be held allowable as depending from a base claim 12 that is allowable for the reasons set forth above in addressing the rejection of claim 12 under 35 U.S.C. § 102.

### **Conclusion**

Claim 12 is believed to be allowable for the at least the reasons argued above. As claim 12 has not been substantively amended, and new claims 28-31 each properly depend directly or indirectly from claim 12, entry of the present amendment is earnestly solicited.

Furthermore, rejoinder of the withdrawn claims—as a matter of right as properly depending from, by containing all of the limitations of, an allowable parent claim and any intervening dependent claims—is also earnestly solicited.

Accordingly, Applicant courteously urges that this application is in condition for allowance. Reconsideration and withdrawal of the rejections is requested. Favorable action by the Examiner at an early date is solicited.

Respectfully submitted,

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